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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,612	01/14/2005	Marcel A. J. Somers	1175/73720	4034
7590 Cooper & Dunham 1185 Avenue of the Americas New York, NY 10036		09/25/2007	EXAMINER ROE, JESSEE RANDALL	
			ART UNIT 1742	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,612	Applicant(s) SOMERS ET AL.	
	Examiner Jessee Roe	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the Claims

Claims 1-20 are currently under examination.

Specification

The disclosure is objected to because of the following informalities: The Technical Field section of the disclosure contains no information about the field of the invention and refers to the preamble of claim 1. Also, the Disclosure of Invention section refers to the preamble of claim 1. These references to claim 1 should be omitted and a proper Technical Field section should be supplied. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Applicant does not positively recite the order in which the article would be case-hardened and coated.

Claim 1 recites the limitation "the activated surface", "the decomposition of the gas", "the metal", and "the metals" in claim 1. There is insufficient antecedent basis for these limitations in the claim.

The phrase "stainless article" in claim 1 is a relative term which renders the claim indefinite. The term "stainless article" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Further, it is unclear what is referred to by a stainless article.

Claims 2-20 are rejected because they depend from an indefinite base claim.

Examiner Interpretation

In view of the indefiniteness in the method steps of claim 1, the Examiner has interpreted the steps recited in the claims as carburizing and/or nitriding and nickel plating occurring in any order.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5, 8, 10, 16 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Larisch et al. (Plasma nitriding stainless steels at low temperatures).

In regards to claims 1, 5 and 8, Larisch et al. disclose a method of case hardening stainless steels such as austenitic stainless steel grade X8CrNiTi18 (Introduction and Experimental). The method of case hardening would include heating

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through the surface of the article (Introduction and Experimental). After nitriding, the samples would be nickel-plated (Experimental).

In regards to claims 2 and 10, Larisch et al. disclose case hardening with a nitrogen containing gas at 300°C and 350°C, which would be below approximately 450°C and below a temperature at which nitrides would be produced (Tables 2 and 5).

In regards to claim 16, Larisch et al. disclose that after nitriding, the samples would be nickel-plated (Experimental).

In regards to claim 19, Larisch et al. disclose treating austenitic stainless steels such as X8CrNiTi18 (Introduction and Experimental).

Claims 1, 3, 5, 8, 9, 17, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshino et al. (US 5,417,776).

In regards to claims 1, 3, 5, 8, 17, and 19, Yoshino et al. ('776) disclose a method of case hardening austenitic stainless steel by pretreating at temperatures in the range of 360°C to 380°C with NF_3 , then nitriding or carbonitriding at a temperature in the range of 150°C to 600°C, and then plating with a Ni-Zn coating (Example 3).

In regards to claims 9 and 20, Yoshino et al. ('776) disclose that treatment would be applied to only the screw body (col. 2, lines 5-10 and Figure 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramqvist et al. (US 4,013,487).

In regards to claims 1 and 4, Ramqvist et al. ('487) disclose applying a coating of nickel and/or cobalt to the surface of articles such as stainless steel that would have been heat treated at temperatures in excess of 725°C (activating the surface) (abstract, col. 1, lines 47-52 and col. 3, lines 12-21). Ramqvist et al. ('487) further disclose applying a thin layer above the nickel layer with materials such as chromium, tin, lead, zinc, copper or cadmium in order to enhance the corrosion resistance (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to omit the layer of chromium, tin, lead, zinc, copper, or cadmium where enhanced corrosion resistance would not be required or desired. Ramqvist et al. ('487) further disclose that carbides would not readily be formed (col. 4, lines 4-13).

In regards to claims 3 and 11, Ramqvist et al. ('487) disclose carburizing with carbon monoxide (col. 2, line 63 – col. 3, line 11).

Claims 2, 4, 10, 12, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino et al. (US 5,417,776).

In regards to claims 2, 4, 10, 12 and 13, Yoshino et al. ('776) disclose nitriding or carbonitriding at a temperature in the range of 150°C to 600°C, which would overlap the range of below 450°C, below 550°C, and below 510°C, which overlaps the temperature

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range of the instant invention which is a prima facie case of obviousness (Example 3). See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed temperature range from the temperatures disclosed by Yoshino et al. ('776) because Yoshino et al. ('776) disclose the same utility throughout the disclosed ranges.

Still regarding claims 2 and 4, because Yoshino et al. ('776) disclose temperatures that overlap the instant invention, it would be expected that the treatment temperatures would be below that which would initiate the formation of nitrides or carbides.

In regards to claim 16, Yoshino et al. ('776) disclose plating (top layer) with Ni-Zn (Example 3).

Claims 7, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larisch et al. (Plasma nitriding stainless steels at low temperatures) as applied to claim 6 above, and further in view of Lowenheim (Electroplating).

In regards to claims 7, 15 and 18, Larisch et al. disclose a method of case hardening stainless steels such as austenitic stainless steel grade X8CrNiTi18 and nickel plating after case hardening as shown above, but Larisch et al. do not specify the method of nickel plating the stainless steel.

Lowenheim discloses that Woods nickel strike bath would be used on stainless steel in order to apply an adherent plate (pg. 224).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of case hardening stainless steels

and nickel plating, as disclosed by Larisch et al., by applying a Wood's nickel strike bath (electrochemical plating), as disclosed by Lowenheim, in order to apply an adherent plate, as disclosed Lowenheim (pg. 224).

Claims 6 and 14 are rejected under 35 U.S.C 103(a) as being unpatentable over Larisch et al. (Plasma nitriding stainless steels at low temperatures) as applied to claim 5 above, and further in view of Asano et al. (US 3,295,936).

In regards to claims 6 and 14, Larisch et al. disclose a method of case hardening stainless steels such as austenitic stainless steel grade X8CrNiTi18 and nickel plating after case hardening as shown above, but Larisch et al. do not specify the thickness of the nickel plating.

Asano et al. ('936) forming a nickel plate on steel in the range of 0.02 to 0.3 micron (20 – 300 nm) would be economical and would have good solderability, lacquerability, and workability (col. 1, lines 9-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of case hardening stainless steels and nickel plating, as disclosed by Larisch et al., by applying a nickel plate in the range of 0.02 to 0.3 microns as disclosed by Asano et al. ('936), in order to achieve an economical coating that would have good solderability, lacquerability, and workability, as disclosed by Asano et al. ('936) (col. 1, lines 9-48).

Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larisch et al. (Plasma nitriding stainless steels at low temperatures), and further in view

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of Froman et al. (US 3,901,771).

In regards to claims 9 and 20, Larisch et al. disclose a method of case hardening stainless steels such as austenitic stainless steel grade X8CrNiTi18 and nickel plating after case hardening as shown above, but Larisch et al. do not specify the method of nickel plating the stainless steel.

Froman et al. ('771) disclose plating steel strip with metals such as nickel wherein only one side of the steel strip would be plated in order to paint or lacquer the other side (col. 1, lines 11-20 and Example 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of case hardening stainless steels and nickel plating, as disclosed by Larisch et al., by only nickel plating one side of the steel strip, as disclosed by Froman et al. ('771), in order to paint or lacquer the other side of the steel strip, as disclosed by Froman et al. ('771) (col. 1, lines 11-20 and Example 2).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JR

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